## REMARKS

In response to the final Office Action mailed January 10, 2006, the applicants respectfully request reconsideration. In the Office Action, claim 16 was rejected, claims 17-20 were objected to, and claims 21-28 were indicated as being allowable. By this amendment, claims 29-32 have been added. Therefore, claims 16-32 are pending in this application.

<u>Rejection of Claims Under 35 U.S.C. §103</u>

Claim16 was rejected under 35 U.S.C. §103(a) as being unpatentable over Pub. No. US: 2004/0133570 A1 of Soltis in view of US Patent No. 4,761,737 to Duvall.

As set forth in Applicant's previous response, applicants again assert that this rejection, as applied to claim 16, has already been presented by the examiner, argued against by the applicants and presumably withdrawn by the examiner. The examiner has not addressed this is the present Office Action.

Applicants' independent claim 16 recites a memory storage system having devices organized in physical data blocks for physical storage of data and at least one processor including an operating system having an extent based file system for abstracting file names to the physical data blocks in the devices by assigning an inode to each file. Each inode is adapted to store extents having a field to point to a logical volume. At least two of the extents are direct extents indicating a logical volume containing data blocks. A first direct extent points to first data blocks in the data storage devices and a second direct extent points to second data blocks in the data storage devices. The first direct extent indicates a different logical volume than a second direct extent.

The Soltis reference discloses a file storage system suitable for providing users and applications with access to shared data found on storage devices attached directly to shared data found on storage devices attached directly to a network. The file system uses layering techniques to inherit file management functionality from existing systems. Metadata is stored and shared among multiple computers by storing the meta-data as real-data in regular files of a standard client-server distributed file system. The name space consisting of inode files stored as real-data on the meta-data server acts as the name space

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for the shared data and file attributes of the inode files are utilized as the file attributes of the shared data. (Soltis, Section 0038 and Abstract). However, Soltis does not teach or suggest in any way that two direct extents in a single inode can be used to indicate different logical volumes from one another.

The examiner now admits that this is the case, that Soltis does not teach or suggest a first direct extent indicating a different logical volume than a second direct extent.

The examiner tries to make up for this deficiency in Soltis by combining Duvall therewith. Applicants assert that this combination is improper and, even if it were proper, it would not teach the invention recited in independent claim 16.

Applicants assert that the combination of Soltis and Duvall is improper, as Soltis teaches against such a combination. Within any Soltis inode, only <u>one logical volume</u> is directly addressed. Several NAS storage devices form a logical volume to comprise a single, logical device (Section 0073). However, he teaches and shows in his Fig 5 that the data blocks for each file must reside on a single logical volume. Each inode file maintains information pertaining to a single SFS regular file stored on an NAS device (Section 0078). Soltis shows that SFS partitions logical NAS devices into multiple segments in order to exploit parallelism in the network environment (Section 0076). Soltis also shows that all the list extents contained in an inode or set of inodes containing a file indicate physical data blocks in a single logical volume (Sections 0078-0079). It is the physical data blocks themselves, not the extents in the inodes, which may contain pointers to a second logical volume, and even there, all of the pointers contained in the blocks of the first logical volume are all shown pointing to blocks in one single second logical volume, not split among multiple logical volumes. (Sections 0078-0079). In other words, <u>Soltis only teaches that all the pointers in one inode can point to one logical volume and all the pointers in another inode can point to a second logical volume (Soltis, Section 0076). But the pointers in one inode cannot point to two different logical volumes.</u>

Therefore, Soltis teaches against one inode being capable of pointing to two different logical volumes. Hence, the combination of Soltis with Duvall, with Duvall

being supplied to provide the capability of enabling Soltis to point to two different logical volumes with one inode, is improper.

Moreover, since Soltis teaches file management in a distributed, shared file system in a client-server environment and Duval teaches memory management in system using virtual memory. There would be no reason to combine the two references, or to apply either of them to data management, thus further rendering the combination improper.

Even if the combination was proper, it would not teach the invention recited in independent claim 16.

The deficiencies of Soltis with respect to Applicants' invention are not overcome by Duvall. The Duvall reference discloses a UNIX file system managed in a virtual machine environment.

Duvall's system manages the allocation of virtual address space in the system. However, Duvall does not teach or disclose the logical volume concept. Indeed, the invention in Duvall involves the use of a map page range service for mapping files directly to a physical address (col 7, lines 10-68, col 8, lines , col 19, lines 60-68, col 20, lines 1-40). Thus, <u>Duvall does not teach, disclose or suggest any provision for writing different direct extents to addresses in different logical volumes</u>, as discussed in Applicant's description and specifically recited in Applicant's claim 16. Thus, Duvall cannot teach, disclose or suggest any inode in which a first direct extent specifies a first logical volume and a second direct extent specifies a second logical volume. Consequently, since neither Soltis nor Duvall teach inodes including a first direct extent which specifies a first logical volume and a second direct extent which specifies a second logical volume, the combination of Soltis and Duvall certainly cannot. Therefore, applicants respectfully submit that claim 16 is allowable over the combination.

Since claims 17 - 20 depend from claim 16, applicants assert that these claims are allowable for at least the same reasons as independent claim 16.

Applicants acknowledge and appreciate the indication that claims 21-28 are allowable.

New claims 29-32 have been added to the application. Claim 29 is pending claim 17 written in independent form, and claims 30-32 mirror dependent claims 18-20. Since

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the examiner indicated that claim 17 would be allowable if rewritten in independent form. applicants respectfully assert that independent claim 29, and dependent claims 30-32, are allowable.

Based on the foregoing, applicants respectfully assert that claims 16-32 are allowable over the art of record and respectfully request that a timely Notice of Allowance be issued in this application.

In the event the Patent Office deems personal contact desirable in disposition of this matter, the Office is invited to contact the undersigned attorney at (508) 293-7835.

Please charge any fees occasioned by this submission to Deposit Account No. 05-0889.

Respectfully submitted,

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Date

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